REMEDIAL SITE ASSESSMENT DECISION – EPA Region 05

Site Name: MATHESON GAS PRODUCTS INC

Alias(es): MATHESON GAS PRODUCTS INC

City: JOLIET **County or Parish:** WILL **State:** IL

Refer to Report Dated: 01/28/2015 **EPA ID:** ILD148348287

Report Developed By: STATE **State ID:**

Report Type: Site Reassessment (00X) #001

- [x] **1. Further Remedial Site Assessment Under CERCLA (Superfund) is not required because:** NFRAP-Site does not qualify for the NPL based on existing information
- [ ] **2. Further Assessment Needed Under CERCLA.**
- [ ] **3. Remedial study/cleanup needed.**

Decision/Rationale:

The U.S. Environmental Protection Agency (EPA) has determined that no further remedial action by the Federal Superfund program is warranted at the referenced site, at this time. The basis for the no further remedial action planned (NFRAP) determination is provided in the attached document. A NFRAP designation means that no additional remedial steps under the Federal Superfund program will be taken at the site unless new information warranting further Superfund consideration or conditions not previously known to EPA regarding the site are disclosed. In accordance with EPA's decision regarding the tracking of NFRAP sites, the referenced site may be removed from the CERCLIS database and placed in a separate archival database as a historical record if no further Superfund interest is warranted. Archived sites may be returned to the CERCLIS site inventory if new information necessitating further Superfund consideration is discovered.

Decision/Rationale (Continued):

Site Decision Made By: Patrick Hamblin, NPL Coordinator

Signature: David M. Bauer for PH

Date: 02/10/2015

LPC# 1970450022 Will County
Matheson Gas Products, Inc.
ILD 148 348 287
SF/HRS

Site Reassessment

Prepared by:
Office of Site Evaluation
Division of Remediation Management
Bureau of Land

SIGNATURE PAGE

Title: CERCLA Site Reassessment for Matheson Gas

Preparer: Dave Reed, Project Manager, Office of Site Evaluation, Illinois Environmental Protection Agency

Dave Reed — Signature

1-14-15 — Date

Approval: Patrick Hamblin, NPL Coordinator, United States Environmental Protection Agency, Region 5

Signature

1/28/15 — Date

The approval signatures on this page indicate that this document has been authorized for information release to the public through appropriate channels. No other forms or signatures are required to document this information release.

CERCLA
Site Reassessment

for:

Matheson Gas Products, Inc.
Joliet, Illinois
ILD 148348287

PREPARED BY:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
DIVISION OF REMEDIATION MANAGEMENT
OFFICE OF SITE EVALUATION

February 24th, 2014

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Section 1.0 Introduction

On January 15th, 2013, the Illinois Environmental Protection Agency's (Illinois EPA) Office of Site Evaluation was tasked by the United States Environmental Protection Agency (U.S. EPA) Region V to conduct a Site Reassessment (SR) at the Matheson Gas Products, Inc. (Matheson Gas) site in Joliet, Will County, Illinois.

The Site Reassessment is performed under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) commonly known as Superfund. Current U.S. EPA policy stipulates that a Site Reassessment be conducted to determine the current status of the Matheson Gas site. The Site Reassessment will consist of an evaluation of recent information to determine if further Superfund investigations are warranted. The Site Reassessment will supplement previous work, and is not intended to replace previous CERCLA assessments.

The Site Reassessment is designed to evaluate recent information that will help determine if the site qualifies for possible inclusion on the National Priorities List (NPL), or should receive a No Further Remedial Action Planned (NFRAP) designation. At the conclusion of the reassessment Illinois EPA will recommend that the site be given a NFRAP designation, receive further Superfund investigations, or referred to another state or federal cleanup program.

Matheson Gas was initially placed on the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) data base on November 29th, 1988. Placement of Matheson Gas on this list was a result of a request for discovery action initiated by the Illinois EPA. The facility received its initial CERCLA evaluation in the form of a Preliminary Assessment (PA) report completed by Greg Dunn from the Illinois EPA, in September of 1989. The report was approved by USEPA in March of 1990. In May of 1991, the Illinois EPA's Pre-Remedial Unit prepared and submitted to the Region V offices of the USEPA a Screening Site Inspection (SSI) work plan for the Matheson Gas facility. The sampling work for the SSI was performed on June 4th and June 5th, 1991 and the final report was approved on December 06, 1991. In 1995, Illinois EPA was asked by the USEPA to perform a Site Team Evaluation Prioritization (STEP) in order to further characterize the site. The STEP investigation was similar to an Expanded Site Investigation (ESI). The sampling work for the STEP was performed in August, 1995 and the final report was approved on September 16th, 1997. At the

completion of the first two steps in the CERCLA process (PA and SSI), Matheson Gas was determined to pose enough of an environmental threat to move to the next step in the CERCLA process and receive more thorough investigations. After the completion of the STEP report, it was determined that Matheson Gas had enough contaminated soil to either enter Illinois EPA's Site Remediation Program or to go through additional CERCLA investigations. In 1999, the site was designated as a State-lead, Other Cleanup Authority (OCA) site.

The Site Reassessment Report will describe current site conditions and illustrate how Matheson Gas has changed since the last CERCLA investigation of 1997. This report will contain a summary of existing information that will include site history, current site conditions, evaluate past analytical data, and evaluate past remedial activities. The Site Reassessment will also support emergency response or time-critical removal activities if they are warranted.

Section 2.0 Site Description and History

2.1 Site Description

Matheson Gas is an active facility that distributes high purity gases. They have been in operation since 1946. The Matheson Gas site is located at Manhattan Road and Richards Street in Joliet, Will County, Illinois. The site occupies 5.44 acres in the Southwest ¼ Section 22 of Township 35 North, Range 10 East. The center of the site is located at 41.4998 degrees latitude and -88.0763 degrees longitude (see Figure 2).

Matheson Gas is located in a mixed residential and industrial area (see Figure 3). Sugar Run Creek runs along the southern and western boundaries. To the immediate north, Matheson Gas is bordered by Will County Farm Services. To the east, the site is bordered by an industrial area.

The site topography is generally flat, and contains a main operational building and adjacent storage tanks, an incinerator, an on-site drinking water well, an old cylinder disposal area where cylinders were buried (now covered by a parking lot), a quarry pit, and a tar pit. Site runoff flows southwest from the paved area of the parking lot and around the buildings to Sugar Run Creek. The main operation buildings are located on the northeast and north-central portion of the site. To the west of the buildings are the storage tanks that hold scrubber waste. When the rented cylinders are returned to Matheson Gas, the cylinders can contain from 1 to 10 percent of

remnant gas. The remnant gas is then vented from the cylinders through scrubber towers to be neutralized with either a caustic or acidic solution. This process generates a scrubber waste which is stored in 2 5,000 gallon tanks situated on the western part of the facility The waste is analyzed for pH and shipped off-site as a non-hazardous waste. An incinerator or thermal oxidizer is used to incinerate some of the remnant gas. There is a well located in the eastern portion of the main manufacturing building which is used by workers for drinking water. The well is 106 feet deep and is located in the eastern portion of the main manufacturing building. Scrap cylinders were buried in an area west and north of the quarry pond on the southeast portion of the site, but the area has since been covered by a parking lot.

Census data has been compiled and formatted for use in GIS applications by ESRI, a GIS software company. ESRI used demographic data from the "Census 2000 Summary File" represented by Census Block Centroids to generate data that can be overlain onto maps for analysis (ESRI). In order to calculate population in areas surrounding the site, the ESRI census data was overlain onto a map from the region and queried based on distance from the site's boundary. Population data based on GIS analysis for areas surrounding the site is shown below. A map illustrating the site with 4-mile distance rings is attached as Figure 4 to this report.

Population within four miles of the site

Distance (mi)	Population
On-Site	0
¼ mile	245
½ mile	1,665
1 mile	5,698
2 miles	22,882
3 miles	58,663
4 miles	85,005

2.2 Site History

Activities began at the site in 1891 when Kirkpatrick, Howk, Massey Stone Company used the area for the quarry operations. The quarrying lasted until 1911 when the property was sold to the Joliet Oil Refining Company for use as a refinery. A 1924 Sanborn Fire Insurance

Map shows that the Joliet Refining Company was operating at the site and that several oil tanks, several stills, two pump houses, and a boiler house were present. During operation of the site as an oil refinery, some of the waste was deposited on the site. Some of the refinery waste was deposited into an old quarry pit left from when the property was used as a quarry. The quarry pond is located on the southeast portion of the site. Another area on site that may contain wastes from the refinery operations is the tar pit area. The tar pit area was located to the west of the main manufacturing building. This pit contained a viscous petroleum tar-like waste. Adjacent areas also contained the viscous tar-like waste. Some of these areas were filled over by Matheson Gas to expand their operations.

The property changed owners but continued to be the location of oil refinery operations until 1946. In 1946, Matheson Gas, then a division of Searle bought the property. During the 1960's Matheson Gas disposed of gas cylinders on site that may have contained gases which include phosgene, chlorine, hydrogen sulfide, and nitrogen dioxide (see the CERCLA Screening Site Inspection Report that was completed in 1991). The areas where the cylinders were disposed of were to the west and north of the quarry pond, but they have since been covered by a parking lot when Matheson Gas expanded its operations. These gases have vastly different industrial and commercial uses. For example, phosgene is a colorless gas that smells a lot like freshly cut hay or green corn. Phosgene was used as a chemical weapon in World War I but the most common use of phosgene is as a building block in the synthesis of pharmaceuticals and other organic compounds. Specifically, phosgene is used in the production of isocyanates which are precursors to polyurethanes.

Matheson Gas has a history of odor complaints from area residents. However, during the CERCLA Site Screening Inspection, there weren't any documented chemical releases to the air. During that inspection, a photo-ionization detector with an 11.7 eV lamp was used to determine the presence of certain air-borne contaminants. No significant readings over background levels were observed.

2.3 CERCLA Investigative History

Matheson Gas was initially placed on the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) data base on November 29th, 1988.

Placement of Matheson Gas on this list was a result of a request for discovery action initiated by the Illinois EPA. The facility received its initial CERCLA evaluation in the form of a Preliminary Assessment (PA) report completed by Greg Dunn from the Illinois EPA, in September of 1989. The report was approved by USEPA in March of 1990. In May of 1991, the Illinois EPA's Pre-Remedial Unit prepared and submitted to the Region V offices of the USEPA a Screening Site Inspection (SSI) work plan for the Matheson Gas facility. The sampling work for the SSI was performed on June 4th and June 5th, 1991 and the final report was approved on December 06, 1991. In 1995, Illinois EPA was asked by the USEPA to perform a Site Team Evaluation Prioritization (STEP) in order to further characterize the site. The STEP investigation of 1995 is equivalent to an Expanded Site Investigation (ESI) in the CERCLA process of today due to the fact that the two investigations require a similar level of detail and effort. The sampling work for the STEP was performed in August, 1995 and the final report was approved on September 16th, 1997. At the completion of the first two steps in the CERCLA process (PA and SSI), Matheson Gas was determined to pose enough of an environmental threat to move to the next step in the CERCLA process and receive more thorough investigations. Soil samples, and waste samples taken from the old quarry pit during the SSI indicated an observed release to the soil exposure pathway by contaminants that are attributable to the site. The compounds that were detected above background concentrations included benzene, ethylbenzene, toluene, xylenes, naphthalene, chrysene, fluorine, phenanthrene and lead. After the completion of the STEP report, it was determined that Matheson Gas had enough contaminated soil to either enter Illinois EPA's Site Remediation Program or to go through additional CERCLA investigations. In 1999, the site was designated as a State-lead, Other Cleanup Authority (OCA) site.

Section 3.0 Other Cleanup Authorities and Activities

On November 19th, 1980, Matheson Gas submitted a Resource Conservation and Recovery Act (RCRA) Part A application to the USEPA for the scrubber waste process and hazardous waste storage area. However, in 1981 USEPA determined that the gas cylinder handling facilities were not subject to RCRA. Matheson Gas amended their Part A application in

1984 to close an associated hazardous waste storage area and obtain generator status. The hazardous waste unit was certified closed on September 17th, 1985 by Illinois EPA. On April 27th, 1989 the Illinois EPA concurred with the USEPA and Matheson Gas that the scrubber tower was not RCRA regulated and subsequently withdrew the Matheson Gas Part A on that date.

In 1999, the site was designated as a State-lead, Other Cleanup Authority (OCA) site. A file search of the Illinois Environmental Protection Agency's files did not turn up any indication that any clean-up took place at the property as a result of this designation.

Currently, available information suggests that the site is not subject to the regulations of other pertinent statues including the Atomic Energy Act (AEA), the Uranium Mill Tailing Radiation Control Act (UMTRA), or the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Section 4.0 Summary and Conclusion

During the previous CERCLA investigations, it was determined that samples collected from the Matheson Gas site revealed the presence of contaminants at or near the surface of the property. This created the possibility for soil exposure which was the primary concern and driving factor for the site. Contributing to the potential for soil exposure was the proximity of residences and access to the property. Approximately 5,698 people live within a one-mile radius of the site at which contamination above background had been documented. Currently, none of the workers at Matheson Gas live on site.

Currently, about half of the property has been paved by Matheson Gas as they have expanded their operations over the years. The former tar pit and cylinder disposal area are now covered by pavement which blocks access to the contaminated soil that was detected underneath. Additionally, fencing on the north and east sides of the property restrict access to the contaminated soil at the site. The west and south sides of the property are bordered by wooded areas and Sugar Run Creek.

Wastewater is generated from cylinder washing operations, cylinder hydrostatic testing, and non-contact cooling water. The cylinder washing and hydrostatic testing waters are filtered in the liquid waste room to remove iron solids. Spent filters are discarded into a dumpster and

then taken off-site to be disposed of properly. The water is combined with cooling water before it is discharged to Sugar Run creek via the on-site quarry pond. Approximately 800 gallons of wastewater are discharged each day under a National Pollution Discharge Elimination System (NPDES) permit (No. IL0062a618).

After the cylinders are free of gas and cleaned, a hydrostatic test is performed on the cylinders. Cylinders that fail the hydrostatic test are rendered useless and are placed in a scrap cylinder accumulation area. The scrap cylinders are then sold to scrap metal recyclers and transported out of the accumulation area.

In summary, chemical contamination and the potential for this contamination to migrate off the site still exist. Based on the nature of the contamination that was found during the previous investigations, it is likely that most of the contamination was from the Joliet Oil Refining Company and not the current Matheson Gas Facility. Much of the contamination detected was more indicative of a refining process than a gas distributing process. No releases to air have been documented, but the contaminants near the surface create the potential for windblown particulates to carry contaminants away from the site. Six groundwater samples were collected during the SSI and STEP investigations. Selenium, vanadium, and copper were detected at elevated levels in the groundwater samples but the concentration cannot be attributed to the activities at the Matheson Gas Site. Sediment samples that were collected during the STEP investigation were useful in determining the surface water pathway. The biggest concern for the site is the soil contamination. Although this contamination pathway has been reduced by limiting access to the site and by paving over some of the more contaminated areas, there is still the possibility of contamination in the soil to migrate off-site.

Section 5.0 References

Illinois Environmental Protection Agency. 1981. Letter Regarding Compliance Found During Inspection. From Kenneth P. Bechely, Manager. To J.R. Wiley, Matheson Division, November 9th.

Illinois Environmental Protection Agency. 1984. Letter Regarding Withdrawal of Part A Permit Application and Request for Closure Plan. From Rama Chaturvedi, PE. To Robert Sterrett, Matheson Gas. October 30th.

Illinois Environmental Protection Agency. 1985a. Letter Regarding Approval of Closure Plan. From Lawrence Eastep, PE. To Edward Flaherty, Matheson Gas, May 3rd.

Illinois Environmental Protection Agency. 1985b. Letter Regarding Approved Closure. From Laurence Eastep, PE. To S. Muller, Matheson Gas, September 17th.

Illinois Environmental Protection Agency. 1987. National Pollutant Discharge Elimination System Permit #IL0062618. November 18th.

Illinois Environmental Protection Agency. 1989. Letter Regarding Withdrawal of Part A Permit Application. From Lawrence W. Eastep, Manager. To S.J. Muller, Matheson Gas, April 27th.

Illinois Environmental Protection Agency. 1991. "CERCLA Screening Site Inspection Report." November 1st.

Illinois Environmental Protection Agency. 1997. "CERCLA Site Team Evaluation Prioritization Report." September 16th.

PRC Environmental Management, Inc. 1994. "CERCLA Preliminary Assessment/Visual Site Inspection. March 14th.

United States Department of Commerce, Economics and Statistics Administration, Bureau of Census. Census 2000: Summary File 1. In: ESRI Data & Maps 2006 Data Update, http://www.esri.com/data/data-maps/overview.html.

U.S. EPA. Environmental Criteria and Assessment Office, Office of Health and Environmental Assessment, Office of Research and Development, Research Triangle Park, NC, 1986, Health Assessment Document for Phosgene EPA/600/8-86/022A.

U.S. EPA web site:
http://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0505862

Viscoky, Adrian, Marvin Sherrill, and Keros Cartwright, 1985, Geology Hydrology, and Water Quality of the Cambrian and Ordovician Systems in Northern Illinois, Illinois State Geological Survey, Champain, Illinois.

Figure 1
SITE LOCATION MAP

Matheson Gas Products, Inc.
Will County
Joliet, Illinois

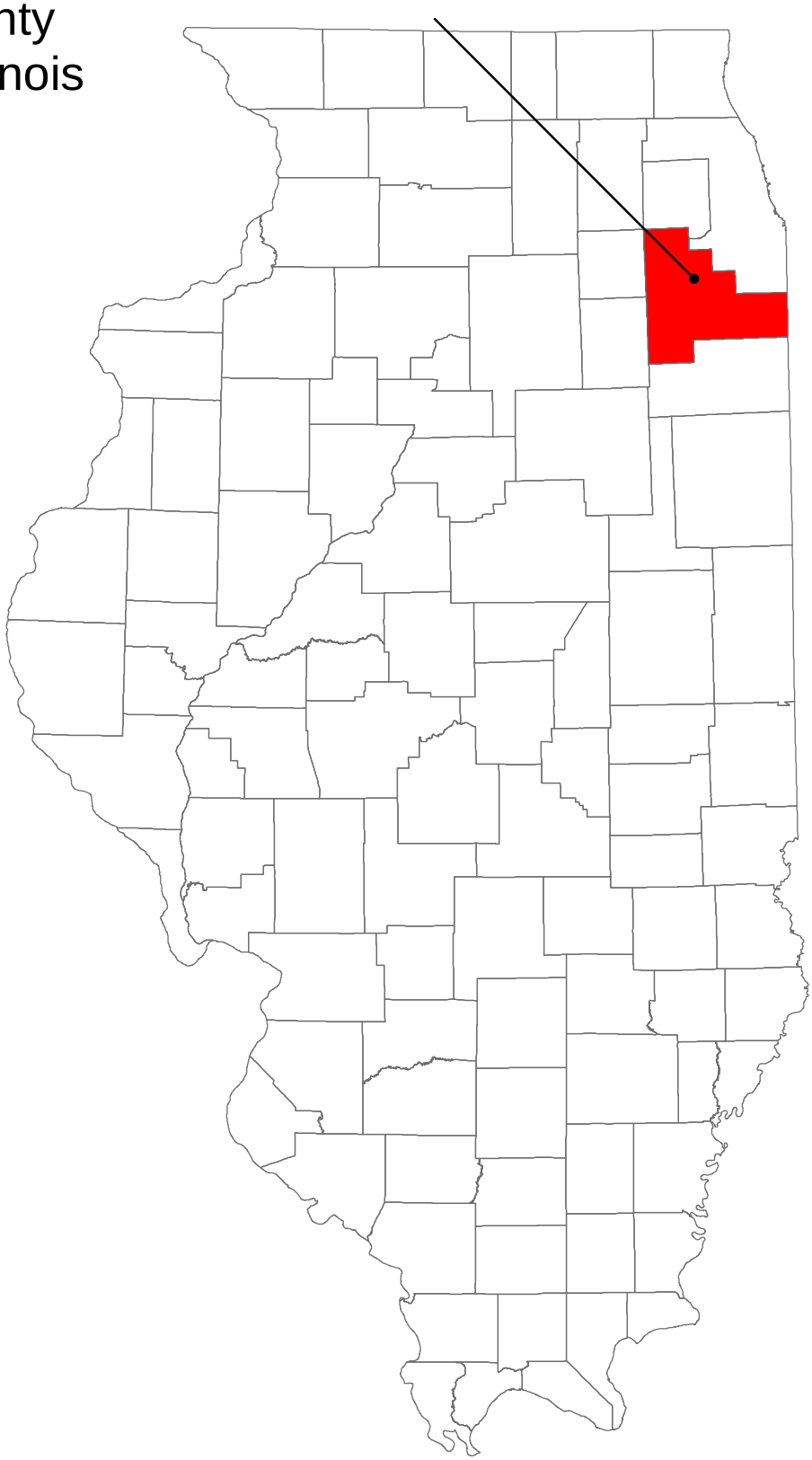


Figure 2
Matheson Topographic Map

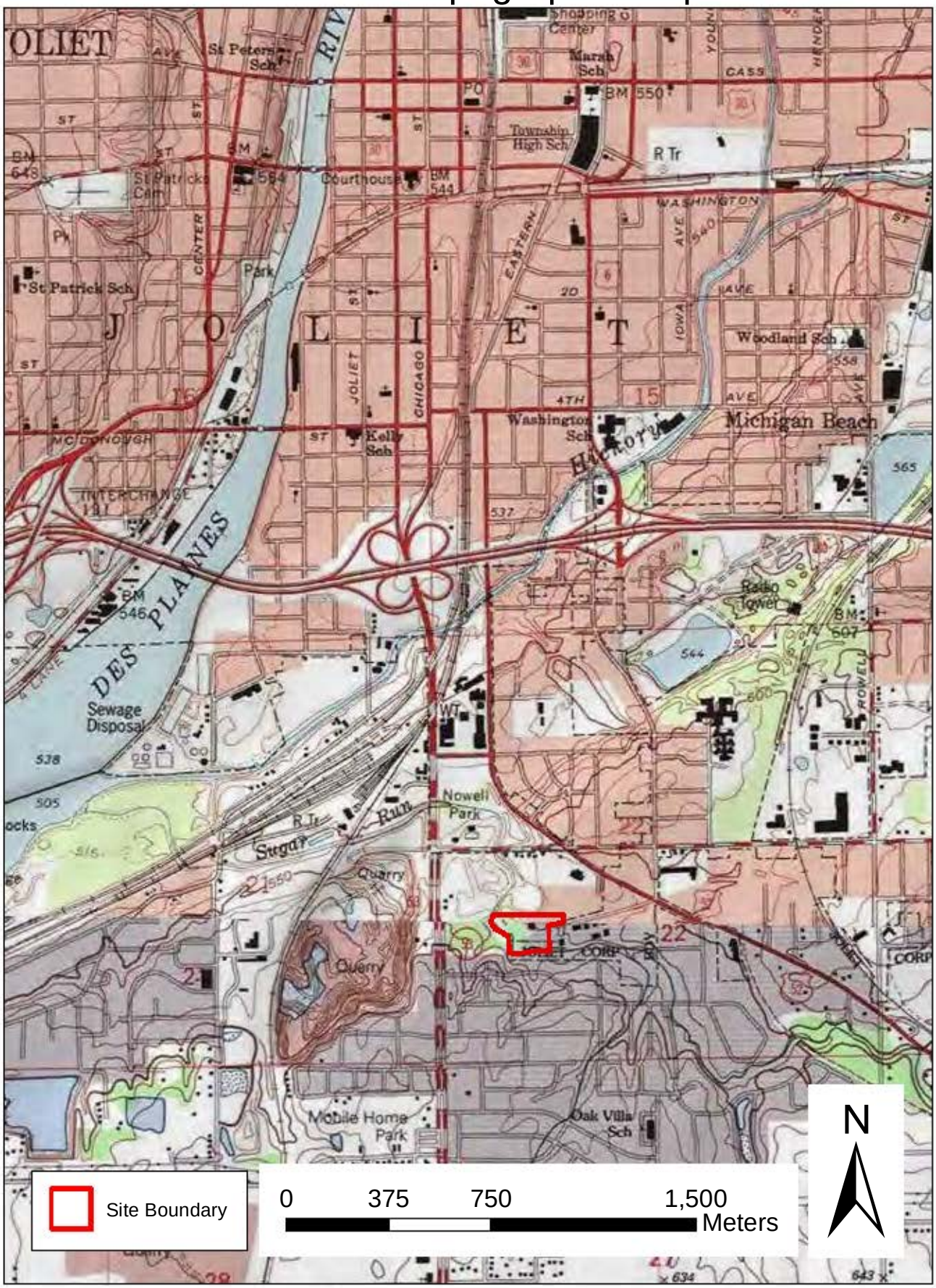


Figure 3
Matheson Site Aerial Photograph

Figure 4
Matheson 4-Mile Radius Map

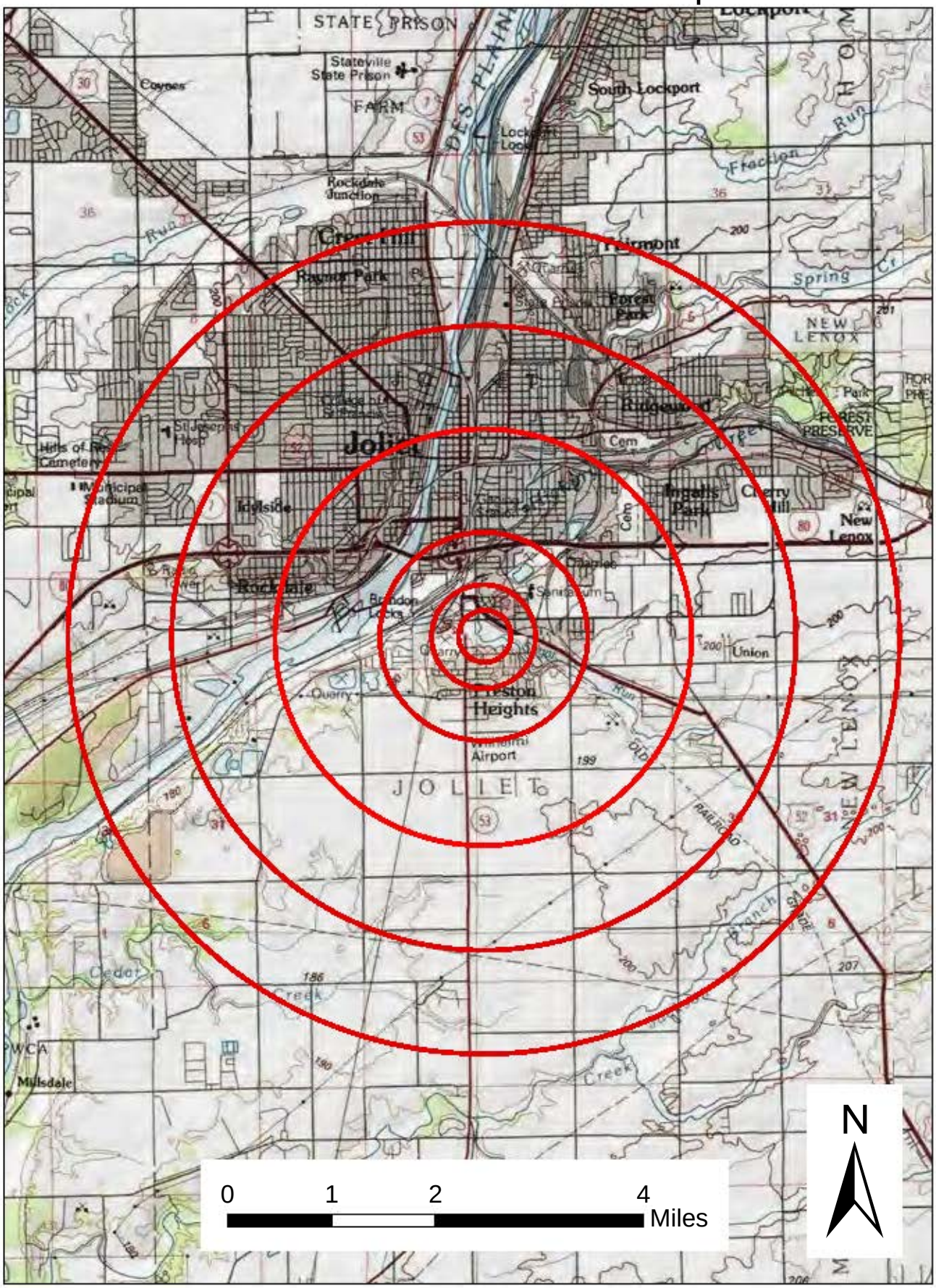
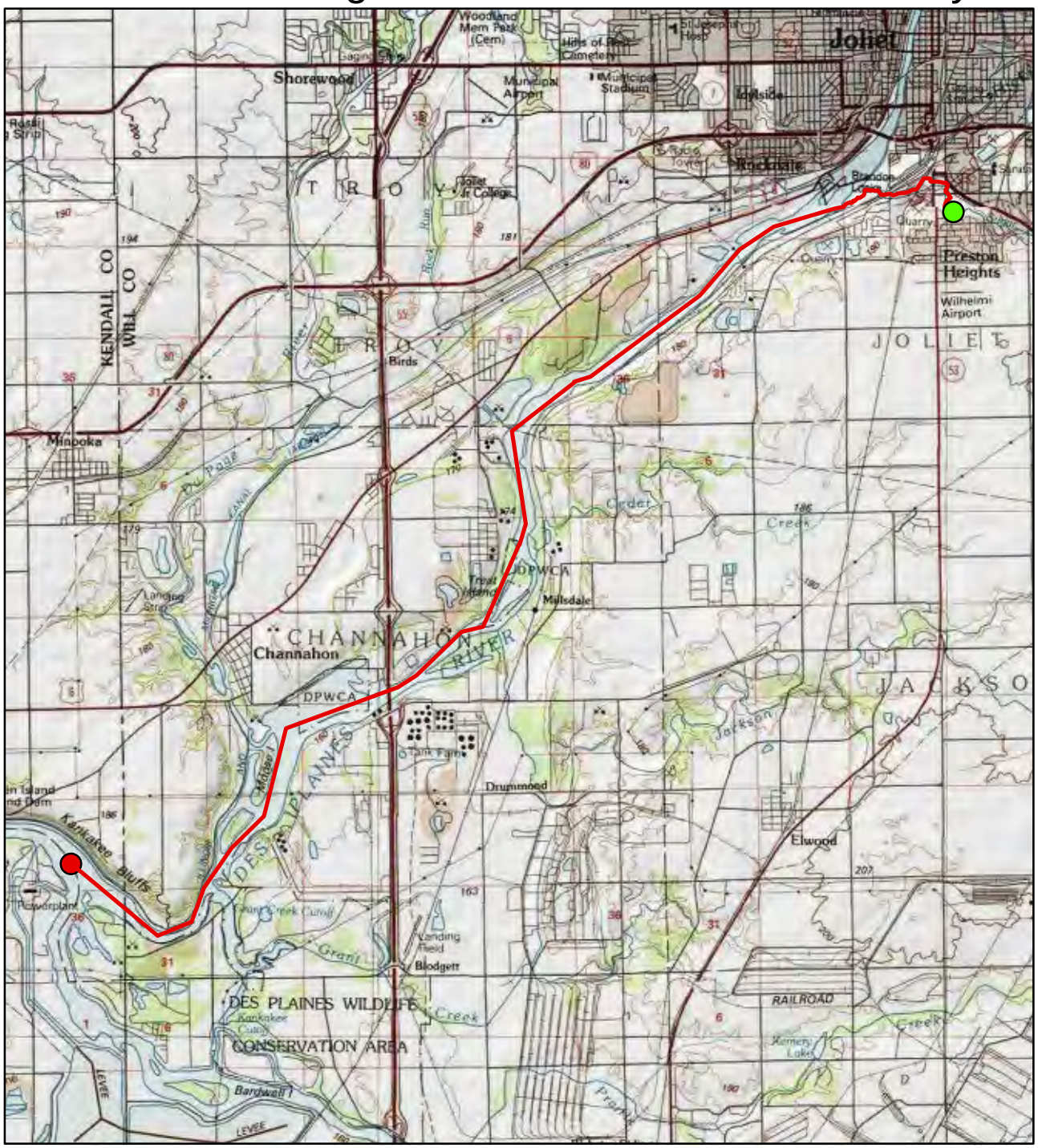


Figure 5
15-Mile In-Water Segment of Surface Water Pathway Map



Legend

- Probable Point of Entry
- In-Water Segment
- 15-Mile Target Distance Limit

N